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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,989

02/13/2006

Jeremy Burroughes

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1397

4743

7590

02/25/2008

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EXAMINER

THOMPSON, CAMIE S

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

02/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,989	Applicant(s) BURROUGHS ET AL.	
	Examiner Camie S. Thompson	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 11/28/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 28, 2007 has been entered.
2. Applicant's amendment and accompanying remarks filed October 1, 2007 are acknowledged.
3. Examiner acknowledges amended claims 1, 2, 5 and 14-15.
4. The rejection of claims 1-19 under 35 U.S.C. 102 (b) as being anticipated by Inbasekaran et al., U.S. Patent Number 6,353,083 is overcome by applicant's amendment.

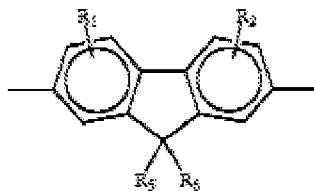
Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

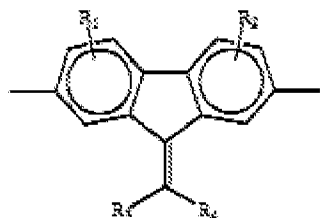
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inbasekaran et al., U.S. Patent Number 6,353,083.

Inbasekaran discloses polymers that are formed by fluorene monomers with the repeat units of



wherein in R_1 and R_2 can be hydrogen and R_5 and R_6 can individually be hydrogen or a C_{1-6} aryl group such a phenyl (or can be a fluorene structure) (see column 2, line 17-50). Additionally, the reference discloses that there is second repeat unit. Column 2 discloses a second repeat with the



structure . Column 3, lines 19-35 of the reference discloses that the R_5 can be hydrogen and R_6 can be a C_{6-12} aryl group substituted with a cyano (electron withdrawing group). Column 3, line 50-column 4, line 68 of the reference discloses that the RMU's of structures I and II bear substituents that are electron withdrawing groups such as fluorine or nitro. It is disclosed in column 3, lines 37-50 of the reference that the polymer can be used in electronic devices including light emitting diode. Inbasekaran discloses that the copolymers can be prepared by a variety of polycondensation processes involving the monomers catalyzed by transition metals such as nickel and palladium. Also, the reference discloses that in the procedures that monomers bear halogen substituents (preferably bromine and chlorine) for reactivity (see column 8, lines 32-65). The reference does not specifically disclose that R_5 and R_6 are phenyl substituted with fluorine and/or nitro groups. However, the reference does disclose that R_5 and R_6 can be C_{6-12} aryl groups (which included substituted phenyl). The

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reference also discloses that the repeating units should have electron transporting properties that are provided by substitution of an electron withdrawing group on the fluorene repeating group. Therefore, it would have been obvious to one ordinary skill that R₅ be hydrogen and R₆ be an aryl group (phenyl with a fluorine or nitro group) in order to impart electron transporting properties in the polymer.

Response to Arguments

7. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues that the Inbasekaran reference does not disclose electron withdrawing groups, fluorine and/or nitro representing Ar in the present claims. Inbasekaran discloses that fluorine and/or nitro can be substituted on the fluorene repeating unit. Inbasekaran also discloses R₅ and/or R₆ can be a C₆-12 aryl group, which can be a substituted phenyl. C₆-12 is generic and would encompass a substituted aryl group. In order to impart electron transporting properties, it would have been obvious to allow for a substitution on the C₆-12 aryl (phenyl) since the aryl group is generic.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris, can be reached at (571) 272-1478. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Terrel Morris/
Terrel Morris
Supervisory Patent Examiner
Group Art Unit 1794